



Special Advisory

ENHANCED VAPOR RECOVERY

Changes in How to Respond to In-Station Diagnostics Alarms

Number 405-A

November 8, 2010

INTRODUCTION

Enhanced Vapor Recovery (EVR) regulations require gasoline dispensing facilities (GDF) to install an In-Station Diagnostics (ISD) system to monitor vapor recovery system performance. ISD systems are effective year round in reducing gasoline vapor emissions because the system operator is quickly alerted of an equipment problem. Thus, ISD delivers important air quality and health benefits.

When an ISD alarm occurs a service call is required. This advisory implements two amendments to the current enforcement policy to provide relief to the station operator by reducing the costs associated with those ISD service calls that do not improve system performance. At the same time, the benefits of ISD are retained.

Pressure Related Alarms in the Winter

The first amendment covered in this advisory deals solely with pressure related ISD alarms. Data collected by the Air Resources Board (ARB) indicate that during the winter fuel season, the number of pressure related ISD alarms increases dramatically. ARB has determined that most of these alarms are not associated with an EVR equipment problem. The most likely cause of the increased number of alarms is the higher volatility of gasoline used in the winter season. Therefore, this advisory reduces the number of service calls in response to winter season pressure related alarms. ARB has undertaken a long term study of these alarms and expects to develop a permanent solution based on the study findings.

Calling for Service when an ISD Alarm Occurs

The second amendment applies to all ISD alarms, including pressure related alarms, year-round. It removes the requirement for a GDF to call for service within 2 hours after the first appearance of an ISD alarm. Allowing additional time to respond to ISD alarms will reduce the number of service calls and still ensure that needed repairs are made in a timely manner.

This advisory modifies the current enforcement policy agreed to in 2006 by the ARB and the California Air Pollution Control Officers Association (CAPCOA) which provided guidance on ISD alarm enforcement by air districts. Some air districts incorporated the current enforcement policy as conditions in construction and operating permits. Pages two through six of this advisory offer greater detail concerning the amendments summarized above.

Amendment 1: How to Respond to Over Pressure (OP) Alarms in the Winter

Amendment 1 shall remain in effect until April 1, 2011.

Under specific circumstances, from November 1 to March 31, a service call or equipment testing may not be required prior to clearing the ISD alarms that are listed in Table 1 of this advisory. This change is being instituted because field data show that in many cases no equipment failure can be identified during the response to winter season OP alarms.

The required response to OP alarms is dependent on the date and is detailed below.

Date Range	Required Response to Over Pressure Alarms
Nov. 1 to Jan. 31	No service or equipment testing is required prior to clearing alarms.
Feb. 1 to Mar. 31	Prescribed equipment testing is required prior to clearing alarm. Must pass all prescribed tests to qualify for 30 day relief.
After Apr. 1	Requirements of current enforcement policy and District permit conditions apply.

Local districts will not require any service calls or equipment testing in response to ISD over pressure alarms that occur November 1 through January 31.

During this three month period, there is no requirement for a service call or equipment testing prior to clearing any of the ISD alarms that are listed in Table 1 of this advisory. Because some districts have incorporated permit conditions that only allow certified service providers to reset or clear ISD warning and failure alarms, the GDF operator may need to have alarms reset by an authorized service provider or seek training by an authorized service provider on the proper procedure to clear and reset OP warning alarms.

Local districts will require only limited service calls and equipment testing in response to ISD over pressure alarms that occur February 1 through March 31.

Beginning with the first OP alarm that occurs on or after February 1, the GDF operator is allowed 48 hours after the first appearance of an ISD alarm to determine if a call for service is required (refer to Amendment 2). From February 1 to March 31, under certain conditions, the GDF operator may earn relief from service call requirements for a period of 30 days. To earn relief from the service call requirement, one or more of the ISD OP alarms listed in Table 1 of this advisory must be displayed on the ISD console, print out, or the electronic report obtained via RS232 interface. Table 2 provides a list of prescribed testing that can identify equipment failures that may lead to OP alarms. If all the prescribed tests are conducted and all tests produce passing results, then the GDF operator is not required to call for service for any OP warning alarms that occur within 30 days of the date this testing was performed. After this 30 day time period has passed, a service call will be required in response to an OP alarm. If all prescribed testing conducted during this service call produce passing results, then the GDF operator is not required to call for service for any OP warning alarms that occur on or before March 31st.

Passing test results must be documented to earn relief from the service call requirement for the next 30 days. If a service call for an OP alarm produces failing test results that identify a repairable vapor recovery system malfunction, then no relief from the service call requirement will be granted. In this case, a call for service and performance of all prescribed testing will be required upon the next occurrence of an OP alarm.

Local districts will require service calls and equipment testing in response to all ISD over pressure alarms that occur after April 1

All OP alarms that occur after April 1 will require the GDF operator to call for service if the alarm is still active 48 hours after the first appearance of the alarm (refer to Amendment 2 below).

Record Keeping Requirements

In order to properly document a required response to an ISD OP alarm and avoid penalties imposed by the district, service providers must conduct the prescribed testing specified in Table 2. Both the service provider and GDF operator should maintain a written record of test results, equipment inspections, and equipment maintenance/repair as required by district regulations and permit conditions.

Amendment 2: Change in Time Allowed Before a Call for Service is Required (applies to all ISD alarms year-round)

Amendment 2 shall remain in effect unless it is formally rescinded.

The ISD system will prevent gasoline dispensing if alarms remain active for specified time periods. Three different time periods are used and, depending on the type of alarm, the ISD system will prevent gasoline dispensing when an alarm remains active for 24 hours, 7 days or 30 days after the first appearance of the alarm. Table 3 lists the ISD alarms that will prevent gasoline dispensing if still active more than 24 hours after the first appearance of the ISD alarm. For these alarms, the GDF operator should schedule a service call within the first 24 hours so that the ISD system does not shut down gasoline dispensing operations.

For ISD alarms that are not listed in Table 3, the GDF operator is allowed to wait 48 hours after the first appearance of an ISD alarm to determine if a call for service is required. For ISD warning alarms that clear within 48 hours, the GDF operator is not required to call for service and may cancel a previously scheduled service call. If an ISD alarm is still active 48 hours after the first appearance of the alarm, a call for service must be made within the next 8 hours.

Questions

If you have any questions regarding this advisory, please contact Ms. Melinda Weaver by phone at (916) 322-8918 or by email at mweaver@arb.ca.gov

California Air Resources Board
Monitoring and Laboratory Division
P.O. Box 2815
Sacramento, CA 95812

Table 1: ISD Alarms Eligible for Relief from Service Call Requirements from November 1 to March 31

Phase II EVR System Description	Vapor Processor Description	ISD System Description	Description of Eligible ISD Over Pressure Related Alarm Condition	
			Message Displayed via ISD Console or Manual Print Out	Message Displayed via Electronic Access
Healy (Vacuum Assist)	Healy Clean Air Separator (CAS)	INCON Franklin Fueling Systems	Weekly Ullage Pressure W	Weekly Ullage Pressure Warning
			Weekly Ullage Pressure F	Weekly Ullage Pressure Failure
			Monthly Ullage Pressure	Monthly Ullage Pressure Warning
			Monthly Ullage Pressure	Monthly Ullage Pressure Failure
VST (Balance)	VST ECS (membrane)	Veeder Root	ISD GROSS PRESSURE WARN	CONTAINMENT GROSS OVER PRESSURE
			ISD GROSS PRESSURE FAIL	CONTAINMENT GROSS OVER PRESSURE
			ISD DEGRD PRESSURE WARN	CONTAINMENT PRESSURE DEGRADATION
			ISD DEGRD PRESSURE FAIL	CONTAINMENT PRESSURE DEGRADATION
			ISD GROSS PRESSURE WARN	CONTAINMENT GROSS OVER PRESSURE
			ISD GROSS PRESSURE FAIL	CONTAINMENT GROSS OVER PRESSURE
			ISD DEGRD PRESSURE WARN	CONTAINMENT PRESSURE DEGRADATION
			ISD DEGRD PRESSURE FAIL	CONTAINMENT PRESSURE DEGRADATION
	Veeder Root Vapor Polisher (carbon canister)	Veeder Root	ISD VP PRESSURE WARN	VAPOR PROCESSOR OVER PRESSURE
			ISD VP PRESSURE FAIL	VAPOR PROCESSOR OVER PRESSURE
			ISD GROSS PRESSURE WARN	CONTAINMENT GROSS OVER PRESSURE
			ISD GROSS PRESSURE FAIL	CONTAINMENT GROSS OVER PRESSURE
EMCO Wheaton Retail (Balance)	HIRT VCS 100 (thermal oxidizer)	INCON Franklin Fueling Systems	ISD DEGRD PRESSURE WARN	CONTAINMENT PRESSURE DEGRADATION
			ISD DEGRD PRESSURE FAIL	CONTAINMENT PRESSURE DEGRADATION
			ISD VP PRESSURE WARN	VAPOR PROCESSOR OVER PRESSURE
			ISD VP PRESSURE FAIL	VAPOR PROCESSOR OVER PRESSURE
EMCO Wheaton Retail (Balance)	HIRT VCS 100 (thermal oxidizer)	INCON Franklin Fueling Systems	Weekly Ullage Pressure W	Weekly Ullage Pressure Warning
			Weekly Ullage Pressure F	Weekly Ullage Pressure Failure
			Monthly Ullage Pressure	Monthly Ullage Pressure Warning
			Monthly Ullage Pressure	Monthly Ullage Pressure Failure
			Vapor Processor Warning	Vapor Processor Warning
			Vapor Processor Failure	Vapor Processor Failure

Table 2 - Prescribed Testing for ISD Over Pressure Alarm Response Feb 1 through March 31

Executive Order VR-202		
Healy Phase II Enhanced Vapor Recovery (EVR) System Including In-Station Diagnostics (ISD) Systems		
Test Description	Test Document #	Comments
Dispenser Tightness Test	CARB Executive Order VR-202, IOM18, START-UP/NEW INSTALLATION/WARRANTY/ANNUAL TESTING FORM (Rev. 10/07) HEALY VP1000 VACUUM PUMP	If Dispenser Tightness Test fails, run Exhibit 7 Nozzle Bag Test Procedure
ISD Vapor Pressure Sensor Verification Test Procedure	CARB Executive Order VR-202, Exhibit 9 (Veeder-Root) or Exhibit 10 (INCON), ISD Operability Test Procedure, Vapor Pressure Sensor Verification Test	
Visual Examination of Phase 1 Vapor Adaptors/Caps		Visually inspect the seal in cap and replace if damaged or missing
Phase 1 Vapor Adaptor Bag Test/Soap Test	CARB CP-201 sec 3.4.3	

Executive Order VR-204		
Vapor Systems Technologies, Inc Phase II Enhanced Vapor Recovery (EVR) System Including Veeder-Root Vapor Polisher and In-Station Diagnostics (ISD) System		
Test Description	Test Document #	Comments
ISD Vapor Pressure Sensor Verification Test Procedure	VR-204 Exhibit 8	
Nozzle Bag Test Procedure	VR-204 Exhibit 10	
Veeder-Root Vapor Polisher Operability Test Procedure	VR-204 Exhibit 11 Section 2.2	Run Section 2.2 Flow Test Only
Visual Examination of Phase 1 Vapor Adaptors/Caps		Visually inspect the seal in cap and replace if damaged or missing
Phase 1 Vapor Adaptor Bag Test/Soap Test	CARB CP-201 sec 3.4.3	

Notes: For Phase II Systems certified under VR 204, which include the VST ECS Membrane, and any other certified system not listed in Table 2, the prescribed tests are equivalent to those listed in the Executive Order and Installation Operation and Maintenance Manuals (IOM). Additional information on specific testing and trouble shooting techniques for each of the currently certified systems can be found in each IOM in the Executive Order.

The Executive Orders can be accessed through the following link: <http://www.arb.ca.gov/vapor/leo-evrphasesII.htm>

The Service Provider and GDF operator should maintain a written record of test results and equipment maintenance as required by district regulations and permit conditions.

Table 3: List of ISD Warning Alarms that will Prevent Gasoline Dispensing if Not Cleared within 24 hours

Phase II EVR System Description	Vapor Processor Description	ISD System Description	Description of ISD Warning Alarms that will Prevent Gasoline Dispensing if Not Cleared within 24 hours		
			Message Displayed on ISD Console or Print Out	Message Displayed via Electronic Access	
Healy (Vacuum Assist)	Healy Clean Air Separator (CAS)	INCON Franklin Fueling Systems	Daily Vapor Collection Warning	Daily Vapor Collection Warning	
		Veeder Root	hnn: GROSS COLLECT WARN	AIL RATIO GROSS BLOCKAGE	
VST (Balance)	VST ECS (membrane)	Veeder Root	ISD VP PRESSURE WARN	VAPOR PROCESSOR OVER PRESSURE	
			hnn: FLOW COLLECT WARN	FLOW PERFORMANCE HOSE BLOCKAGE	
			VP DUTY CYCLE WARN	VAPOR PROCESSOR STATUS VP DUTY CYCLE WARN	
			VP EMISSION WARN	VAPOR PROCESSOR STATUS VP EMISSIONS WARN	
	Veeder Root Vapor Polisher (carbon canister)		ISD VP STATUS WARN	VAPOR PROCESSOR STATUS VP EMISSIONS WARN	
			ISD VP PRESSURE WARN	VAPOR PROCESSOR OVER PRESSURE	
EMCO Wheaton Retail (Balance)	HIRT VCS 100 (thermal oxidizer)	INCON Franklin Fueling Systems	hnn: FLOW COLLECT WARN	FLOW PERFORMANCE HOSE BLOCKAGE	
			Daily Vapor Collection Warning	Daily Vapor Collection Warning	
			Vapor Processor Warning	Vapor Processor Warning	
			Vapor Processor Input Warning	Vapor Processor Input	

NOTE: All alarms listed in Table 3 are warning alarms. If an alarm is allowed to go into failure status, gasoline dispensing will be disabled.